

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

Amendments to Appendices I and II of CITES

Twelfth Meeting of the Conference of the Parties
Santiago (Chile), November 3-15, 2002

A. PROPOSAL

Inclusion of *Hieremys annandalii* in Appendix II in accordance with Article II 2(a) of the Convention, and satisfying Resolution Conf. 9.24, Annex 2a, Criteria A and Bi).

B. PROPONENT

People's Republic of China and United States of America, in accordance with the consensus recommendation of the CITES-sponsored Technical Workshop on Conservation of and Trade in Freshwater Turtles and Tortoises in Asia, held in Kunming, China in March 2002.

C. SUPPORTING STATEMENT

1.1 Taxonomy

1.1.1 Class: Reptilia

1.2 Order: Testudines

1.3 Family: Bataguridae

1.4 Genus and Species: *Hieremys annandalii*

1.5 Scientific synonyms: *Cyclemys annandalii* Boulenger (1903)

(This species has been erroneously spelled *annandalei* by some authors.)

1.6 Common names:

English: Yellow-headed Temple Turtle

Spanish: ?

French: ?

Khmer: *Sakal*

Thai: *Tao bua*, *Tao wat hua luang*, *Tao bung*, *Tao moh*

1.7 Code Numbers:

1.2 Biological Parameters

Clutches usually contains 4 to 6 eggs (Bourret, 1941; Moll, 1979; van Dijk pers comm 2002), occasionally up to 8 (Nutphand, 1979). It is not known whether multiple nests or clutches are laid.

2.1 Distribution:

Hieremys annandalii occurs in Cambodia, Lao PDR, Malaysia, Thailand, and Vietnam. It may also occur in Myanmar, but has not been confirmed there as yet (Van Dijk, 2000). In Cambodia it occurs predominantly in lowland wetland areas (Tana et al., 2000). In Lao PDR it also occurs in large-river lowland habitats (Stuart and Timmins, 2000). In Malaysia, the species is restricted to northern Peninsular Malaysia (Sharma and Tisen, 2000). In Thailand, the species is found in the lowland wetlands of central and peninsular regions (van Dijk and

Palasuwan, 2000). In Vietnam, the species is found in rivers, freshwater marshes, and possibly estuaries in the lowlands of southern Vietnam (Hendrie, 2000).

1.2 Habitat availability:

General: This turtle lives in swamps, flooded fields, and rivers with slow currents and can apparently tolerate brackish conditions (Ernst, 1998) and moderate levels of organic water pollution (Peter Paul van Dijk, personal communication, 2002). Cambodia and Lao PDR: In Cambodia and Laos, this species lives in predominantly lowland wetlands, which correlates closely with where the great majority of rural/local people live (Stuart and Timmins, 2000; Tana et al., 2000). In Laos, the habitat is in presumably wet areas at low elevation (Stuart, 1999). Myanmar: There is no specific information on habitat availability for *H. annandalii* in Myanmar. Malaysia: This species is encountered in black-water swamps and associated *Malaeuca* forests in Terengganu and possibly Kelantan. It is unknown from other habitat types in the Peninsula but it is likely to be encountered in irrigation canals and ricefields in the same states (Sharma and Tisen, 2000). Thailand: The most suitable habitat for this species has been converted to agricultural land and most watercourses in these lowlands are regulated. Habitat availability is worrisome (van Dijk, 2000). Vietnam: Habitat availability for this species is unknown but it is probably reduced due to agricultural conversion and loss of riparian wetlands and forest (Hendrie, 2000).

2.3 Population status:

General *H. annandalii* is endangered in Cambodia, Laos PDR, and Vietnam, and likely Vulnerable or Endangered in Thailand (Rhodin, 2002). Cambodia: The Cambodian population is probably the most important in the region (Tana et al., 2000) (Rhodin, 2002). Lao PDR: Only a few records exist in the country for *H. annandalii* and it is presumed to be relatively rare (Stuart and Timmins, 2000). Myanmar: Unknown, presumed very rare. Malaysia: The population in Malaysia is marginal and very small (Rhodin, 2002). Thailand: The status of the yellow-headed temple turtle in Thailand is poorly known (Rhodin, 2002) but is considered uncommon and presumed depleted in most areas (van Dijk, 2000). Vietnam: The population status of the species in Vietnam is unknown (Hendrie, 2000) but is probably nearing extinction (Tana et al., 2000).

2.4 Population trends:

Cambodia: There is no specific information on population trends for *H. annandalii* in Myanmar. Lao PDR: No long-term monitoring programs based in a single area have been initiated for turtles. However, evidence that turtle populations have declined considerably in Laos come from an extreme paucity of field records during 6 years of surveys (Stuart and Timmins, 2000). Malaysia: Data are not available on population trends for this species in Malaysia (Sharma and Tisen, 2000). Thailand: Population trends for this species are unknown but it is likely in continuing decline (van Dijk and Palasuwan, 2000). Vietnam: Population trends of *Hieremys annandalii* are unknown. However, natural populations are unlikely to sustain present levels of collection (Hendrie, 2000).

1.5 Geographic trends:

No information was available on the geographic trends of this species.

2.6 Role of the species in its ecosystem:

The species is almost exclusively vegetarian, feeding on a wide range of aquatic vegetation, fallen fruits and bank-side vegetation overhanging the water.

2.7 Threats:

Cambodia: *H. annandalii* is considered Endangered in Cambodia due to trade exploitation (Rhodin, 2002). It is harvested for subsistence consumption and export trade. Lao PDR: This species is very reduced in numbers in Laos from collection pressure because they are a large-sized species that are associated with large river lowland habitat which also contains high densities of people (Stuart and Timmins, 2000). Myanmar: There is no specific information on threats to *H. annandalii* in Myanmar. Malaysia: The black-water swamps in Terengganu and Kelantan are likely to be drained in the years to come as more swamps are identified for drainage and land development (Sharma and Tisen, 2000). Thailand: Threats in Thailand to this species are from capture for consumption of adults, loss and degradation of lowland wetland habitat, entanglement in nets, and pollution (van Dijk and Palasuwan, 2000). Vietnam: In Vietnam, the main threats to *H. annandalii* are collection and habitat loss (Hendrie, 2000).

3. Utilization and Trade

3.1 National utilization:

Cambodia: Local subsistence use of turtles is widespread in Cambodia, and probably not species-specific (Tana et al., 2000). Harvested turtles that are not sold because of lack of demand from traders, are probably consumed by the hunters (Tana et al., 2000). There is also domestic trade in turtles, which are used for meat, eggs, Khmer and Chinese medicine, decoration, pets, and Buddhist release (Tana et al., 2000). Lao PDR: Local subsistence use of wild-collected turtles is not species-specific and is widespread throughout Laos (Stuart and Timmins, 2000). This species is hunted for food and is probably sold to Vietnamese traders for the Vietnamese and Chinese consumption trade (Stuart 1999). Myanmar: Incidental observations of turtle traders (Platt et al., 2000, 2001 as cited in van Dijk, 2002) within Myanmar indicate that turtle collection is widespread and intensive throughout the country (van Dijk, 2002). Malaysia: This species is used for religious purposes in Malaysia (Sharma and Tisen, 2000). Thailand: In Thailand, this species is captured for subsistence consumption and to supply specialized restaurants (van Dijk and Palasuwan, 2000). Vietnam: *H. annandalii* is common in Buddhist temple ponds. In the past, consumption may have been local, but because of the value of large turtles in the export trade, most wild caught individuals are now being sold to traders (Hendrie, 2000). *H. annandalii* has been documented in Cau Mong market in Ho Chi Minh (Le Dien Duc and Broad, 1995 cited in Hendrie, 2000).

3.2 Legal international trade:

Cambodia: Legal international trade, run through a government export agency KAMFIMEX, ships turtles by air directly from Phnom Penh to Guangzhou or Hong Kong Special Administrative Region of China (Hong Kong SAR), China (Tana et al., 2000). This trade is restricted by an annual quota and by the size of individual turtles, which must be larger than 1 kg to be legally exported (Tana et al., 2000). In the first legal international export of live reptiles in the fishing season 1998-1999, the total exported quantity was 200 tons: turtles were estimated to comprise 50% of this shipment (Tana et al., 2000). The same live reptile

quantity was approved for export to China in the fishing season 1999-2000 (Tana et al., 2000). Lao PDR: As of 1999, no data were available on volumes of domestic turtle trade in Laos, as no monitoring studies have been conducted (Stuart and Timmins, 2000). Myanmar: Commercial trade in tortoises and freshwater turtles is not allowed in Myanmar, and as a result, no official trade statistics are available (van Dijk, 2002). Malaysia: There is only limited information available from the Department of Wildlife and National Parks on the legal trade in freshwater turtles (Sharma and Tisen, 2000). Records indicate that 15,818 live turtles were exported into Hong Kong SAR from Malaysia between 1993 and 1996 (Lee, 1996 cited in Sharma and Tisen, 2000). Thailand: There is no legal international trade of this species from Thailand (van Dijk and Palasuwan, 2000). Vietnam: There are no official CITES office records indicating legal export of this species although, based on possible confusion between this species and *H. grandis*, it is possible that *H. annandalii* were exported under *H. grandis* permits (Hendrie, 2000).

3.3 Illegal trade:

Cambodia: The illegal international trade of Cambodian turtles to Vietnam is much larger than the legal trade quantities to China (Tana et al., 2000). Although there is virtually no direct information on exploitation and trade in freshwater hardshell turtles in Cambodia, a notable proportion of specimens in trade in Vietnam, most destined for export to China, originate in Cambodia (LeDien Duc and Broad, 1995 cited in Jenkins, 1995). Few data exist on illegal trade of turtles to Thailand, although without additional information it is presumed to be much less significant than the trade to Vietnam (Tana et al., 2000). Lao PDR: All trade in turtles in Laos is considered legal as no turtles are truly protected in this country (Stuart and Timmins, 2000). Myanmar: Substantial quantities of turtle species endemic to Myanmar observed in markets in mainland China show that illegal exports from Myanmar are substantial (Kuchling, 1995; Artner & Hofer, 2001 as cited in van Dijk, 2002). Malaysia: In Malaysia, it is probable that illegal trade occurs since it is unlikely that local management authorities, including Wildlife Department and Customs staff, are able to identify all traded turtle species (Sharma and Tisen, 2000). Thailand: The supply trade to restaurants seems fairly intensive and organized (van Dijk and Palasuwan, 2000). *H. annandalii* is traded illegally for export from Thailand (van Dijk and Palasuwan, 2000 as cited in Rhodin, 2002). Vietnam: This species is fairly uncommon in trade seizures along northern land routes to China and is rarely seen in the pet trade in Hanoi (Hendrie, 2000).

3.4 Actual or potential trade impacts:

Cambodia: This species is Endangered in Cambodia due to trade exploitation (Rhodin, 2002). Lao PDR: This species is Endangered in Lao PDR due to trade exploitation (Rhodin, 2002). Myanmar: Due to the lack of survey data, it remains difficult to assess the turtle populations in Myanmar; however, available data suggest that declines have occurred as a result of over-harvesting for local consumption and to meet the demands of export markets (Platt et al., 2000). Malaysia: This species has not been observed in pet stores or wet markets and is therefore unlikely to be threatened by local sale and consumption (Sharma and Tisen, 2000). The Department of Wildlife and National Parks of Peninsular Malaysia export records did not list this species in 1999 (Sharma and Tisen, 2000). Thailand: In Thailand, potential trade impacts are potentially serious to *H. annandalii* because of depleted populations and the absence of securely protected populations (van Dijk and Palasuwan, 2000). Vietnam: In Vietnam, threats to this species include depletion of wild populations and compromised viability of surviving populations (Hendrie, 2000).

3.5 Captive breeding or artificial propagation for commercial purposes (outside country of origin):

Vietnam: It is possibly included in unconfirmed turtle farming efforts in southern Vietnam.

China: Not known to be farmed in the extensive Chinese freshwater turtle farming operations (van Dijk, *pers comm*; check Shi & Parham, 2001).

4. Conservation and Management

4.1 Legal status:

3.1.1 National:

Cambodia: Law No. 33 (Department of Fisheries) and Law No. 35 (Department of Forestry) are the main laws on the use of aquatic animals and use of land animals, respectively (van Dijk, 2002). Joint Declaration No. 1563 (Ministry of Agriculture, Forestry and Fisheries and Ministry of Environment) states that wild animals can't be hunted with traps, explosive materials, or poison, nor can wild animals or their products be sold, commercialized, exploited, or transported, nor can wild animals or their products be served in restaurants (Tana et al., 2000). Declaration No. 359 1563 (Ministry of Agriculture, Forestry and Fisheries) protects "nationally threatened" wild animal species (van Dijk, 2002). Although no turtles are currently listed, they could be added in the future if they are shown to be threatened (van Dijk, 2002). Government Decision 01 (Department of Forestry) and Government Decision 02 (Department of Fisheries) focuses on ending illegal trade in land animals and in aquatic animals respectively (Tana et al., 2000). Cambodia has been a signatory member of CITES since 1997.

China: Several freshwater turtles and tortoises are listed in the People's Republic of China Wild Animals Protection Law are state major protected wildlife grade I, while others are grade II protected (van Dijk, 2002). However, the keeled box turtle is neither grade I or grade II. The Wild Animals Protection Law also covers important economic and scientific species, though the actual species are not listed. For terrestrial species, the State Forestry Administration is responsible for the administering and enforcing of this law, while the Fisheries Ministry is responsible for the aquatic species (van Dijk, 2002). The collecting of state major protected species is only allowed for scientific research, captive breeding, exhibition and other special reasons. Permission from the Forestry or Fisheries bureau in the central government is needed for the collecting of grade I protected species; permission from the Forestry or Fisheries Department in the provincial government is required for grade II protected species (van Dijk, 2002). The transport of state major protected species across county boundary needs the permission from the provincial Forestry or Fisheries Department. The import and export of these state major protected species and CITES-listed species need the permission from the Forestry or Fisheries bureau in the central government and a certificate issued by the Endangered Species of Wild Fauna and Flora Import and Export Administrative Office (Shi and Lau, 2000 cited in van Dijk, 2002). Regarding imports and exports of turtles, China has tightened regulations considerably in recent years (van Dijk, 2002). Notice of Strengthening the Live Reptile Import and Export Management (China CITES Authority No.[2000] 51) was issued by the State Endangered Species Import and Export Administration Office in June 2000 (van Dijk, 2002). This was augmented by Notice of

Strengthening the Trade Management on Turtles and Tortoises, issued by the State Endangered Species Import and Export Administration Office on June, 17, 2001 (van Dijk, 2002). Under these Notifications, commercial imports of turtle species listed on Appendix II of CITES are only accepted from Parties that set an annual export quota, all commercial imports of all turtles from Indonesia, Cambodia and Thailand are suspended, all imports of turtles into China need to be accompanied by export permits or certificates from the exporting country, turtle imports are restricted to a small number of designated airports, and local wildlife authorities are instructed to co-operate closely with customs authorities (van Dijk, 2002).

Lao PDR: Wildlife legislation is under review in Lao PDR (van Dijk, 2002); current legislation in force (Decree of the Council of Ministers No. 118/CCM on the Management and Protection of Aquatic Animals, Wildlife and on Hunting and Fishing, 1989) does not, in effect, protect freshwater turtles from exploitation (Stuart and Timmins, 2000 cited in van Dijk, 2002)). Although 3 local names of turtles were listed in the Lao Wildlife Management Categories, no scientific names of turtles were listed in wildlife protection legislation (Stuart and Timmins, 2000). Lao PDR is not a CITES Party.

Malaysia:

Federal Legislation

At the national level, two federal Acts are the primary legislation for the protection of wildlife and fisheries i.e. the Protection of Wild Life Act 1972 and Fisheries Act 1985. The former, applicable only to Peninsular Malaysia, does not cover any of the species of chelonians, and this means that they are extremely vulnerable to exploitation (Sharma & Tisen, 2000 as cited in van Dijk, 2002). In contrast, the Fisheries Act 1985 specifically states in its preamble, “An Act relating to fisheries, including the conservation, management and development of maritime and estuarine fishing and fisheries, in Malaysian fisheries waters, to include turtles and riverine fishing in Malaysia and matters connected therewith or incidental thereto.” However, the Act also clarifies that matters relating to maritime and estuarine fisheries, excluding turtles, are enumerated in the Federal and Concurrent Lists, whereas turtle hunting and riverine fishing are under the State List. This means that provisions of the Act “insofar as they relate to turtles and riverine fisheries in any State in Malaysia shall not come into operation in that State until they have been adopted by law made by the Legislature of the State.” Whether or not individual States have adopted the Fisheries Act 1985, their fisheries resources are automatically afforded legal protection by virtue of these matters being on the Concurrent List of the Constitution, but turtles are specifically excluded from this legal mandate (van Dijk, 2002). Thus, the onus lies on each State to formulate effective legislation to protect both marine and non-marine turtles. Unfortunately, this circumstance has led to either a lack of standardized legal protection for most turtle species inhabiting the peninsular or lack of protection whatsoever. (Sharma & Tisen, 2000)

Part VII of the Fisheries Act 1985 deals with turtles and inland fisheries and promotes development and rational management by state authorities in consultation with the Director General of the Department of Fisheries. This allows the states to make rules for proper conservation and regulation of turtles, their eggs, and inland fisheries, inclusive of licensing, fishing methods, dam construction, and sand removal. In areas beyond the jurisdiction of the States, the Director General has the power to make regulations. It is unclear as to whether the terminology used in the

legislation intended to include only marine turtles, or provides means to protect freshwater terrapins as well (Sharma & Tisen, 2000 as cited in van Dijk, 2002). The import and export of turtle eggs are subject to the restrictions stated in the Customs (Prohibition of Imports) Order 1988 and Customs (Prohibition of Export) Order 1988; however, there is confusion over the exact meaning of the terms used in the legislation. Under the First Schedules, the importation and exportation of “the turtles eggs” from or to any country are absolutely prohibited. Under the Second Schedules, “eggs of testudinate (terrapin and the like) excluding turtle eggs” may not be imported or export from or to any country without license. Unfortunately, the terminology is not well defined in the legislation, which may result in various interpretations. It is widely assumed that “turtle eggs” means those of marine turtles only, while the “eggs of testudinate (terrapin and the like)” refer to all other species, since all turtles, terrapins and tortoises are considered testudinales. (Sharma & Tisen, 2000)

State Legislation

Existing legislation at the State level in Peninsular Malaysia concentrates on matters related to regulated exploitation, licensing for egg collection, and possession or killing of marine turtles, but not terrapins or tortoises (Gregory & Sharma, 1997 as cited in van Dijk, 2002). Of the eleven peninsular States, only six, excluding Perak’s River Rights Enactment 1915, currently have legislation pertaining to protection and exploitation of turtles and three States (Pahang, Penang and Perak) had a draft document under review in 1999. However, two States (Perlis and Selangor) do not have any legislation whatsoever to safeguard chelonians (Sharma & Tisen, 2000).

In 1915, Perak implemented the River Rights Enactment, which granted exclusive rights to take turtle eggs along specified areas of the Perak River to be vested in the Ruler of the State. During five months of the year, setting traps was prohibited and at no time could anyone kill any turtle without permission. Still in effect today, this enactment claims turtles as those reptiles of genera *Orlitia*, *Callagur*, *Batagur*, or *Hardella*. New legislation is currently being drafted in Perak to provide more effective protection for turtles (Sharma & Tisen, 2000).

Legal measures for turtle conservation were initiated in Terengganu and Kedah in 1951 and 1972, respectively, where legislation pertaining to reptiles was based on local names instead of using taxonomic criteria. These two States rely on Malay language terms such as “tuntung” and “penyu”, which are generic names for terrapins and marine turtles, for identification of species. Disjointed phrasing in the Kedah Enactment seems to imply that only reptiles known as “penyu” and “tuntung” known as *Callagur picta* (= *C. borneoensis*) are covered by the legislation. (Sharma & Tisen, 2000)

Legislation from Johor, Kelantan and Negeri Sembilan uses the phrase “any reptile belonging to Order Chelonia” in its interpretation. However, Malacca’s legislation restricts its coverage to five species listed in the First Schedule, although it qualifies turtles as being any reptile belonging to the Order Chelonia, which technically means all twenty-two local species (Sharma & Tisen, 2000).

Malaysia acceded to CITES in October 1977 and entered into force in January 1978.

Myanmar: The Burma Wildlife Protection Act, 1936, was the main law extending

protection to listed species (van Dijk, 2002). In 1991, the only listed species were mammals and birds, and no turtle species were included in this law (Gaski and Hemley, 1991 cited in van Dijk, 2002). The new “Protection of Wildlife, Wild Plants and Conservation Law,” enacted in 1994, replaces the Burma Wildlife Protection Act of 1936 (Moe et al., 2002). Myanmar law prohibits the commercial exploitation of natural resources, including tortoises and freshwater turtles, but allows collection for subsistence use outside protected areas and reserved forests (van Dijk, 2002; Moe, 2002). Thus, the commercial trade of tortoises and freshwater turtles is illegal (Platt et al., 2000; Moe et al., 2002). All native turtle species are specifically protected under the Protection of Wildlife, Wild Plants and Conservation Law, 1994, and all wildlife is protected in wildlife sanctuaries and national parks (Platt et al., 2000). The Department of Fisheries does not issue permits for the harvest of turtles and Law 34 provides stiff penalties for those engaged in turtle trading (Platt et al., 2000). Myanmar became a CITES Party in 1997.

Thailand: In Thailand, the yellow-headed temple turtle is specifically protected from exploitation under the Wild Animals Reservation and Protection Act B. E. 2535 (WARPA), which was revised in 1992 (van Dijk and Palasuwan, 2000, van Dijk, 2002). The WARPA Law controls hunting, trade, possession, import, export, and commercial breeding of wildlife. It also includes provisions for the implementation of CITES. Thailand has been a CITES signatory since 1983.

Vietnam: Ministerial decree No 18 of the Council of Ministers Stipulating the Categories of rare and precious forest fauna and flora, and their management and protection, dated 17 January 1992, included two species of non-marine turtles, *Indotestudo elongata* and *Pelochelys bibroni* (= *P. cantorii*), under Group II. The decree restricted utilization of these two species to scientific research, establishing breeding populations, and international exchange. Any such activities require a collection permit from the Ministry of Agriculture and Rural Development (Hendrie, 2000). The list of species protected by Decree 18 has recently been amended and submitted to the government for approval (Le et al., 2002). The revision has moved *Pelochelys bibroni* into Group I, and has added *Hieremys annandalii* to Group II. Directive 359 (1996) restricts trade in wildlife and animal parts, including prohibiting the sale of wildlife in restaurants. Commerce and trade regulations require a permit issued at the provincial level for trade in any commodity, including wildlife (Hendrie, 2000). Circular 62/2001/TT-BNN issued on 05 of June 2001 by the Ministry of Agriculture and Rural Development to guide imports and exports of goods and commodities managed by the Ministry for the period of 2001-2005 stipulates that Vietnam prohibits exports of all wild animals and rare and precious plants. Thus export of all native turtle species collected from the wild is currently prohibited. Viet Nam became a Party to CITES in 1994.

4.1.2 International:

The yellow-headed temple turtle is not currently listed in the CITES appendices.

4.2 Species management:

4.2.1 Population monitoring:

No specific population monitoring programs for this species, or for Asian freshwater

turtles in general, have been identified. Various site-specific surveys have been conducted and their results indicate that the species is generally uncommon to rare (see 2.3).

3.1.2 Habitat conservation:

General: Appropriate wetland habitats for this species have likely been conserved in protected areas in various portions of the species' range. Lao PDR: Since 1993, the government of Laos has officially designated 20 areas as National Biodiversity Conservation Areas which cover approximately 12.5% of the country's surface (Stuart and Timmins, 2000). Malaysia: A number of protected areas have been declared in Malaysia including extensive areas such as Belum, Taman Negara, and Endau-Rompin in the Peninsula, and Mulu and Kinabalu National Parks in Sarawak and Sabah (Sarma and Tisen, 2000). Few of these areas, however, contain lowland riverine wetlands (MacKinnon, 1997; van Dijk, personal communication, 2002). Myanmar: Significant areas of Myanmar have been designated as protected areas (currently 38 areas covering 31,972 sq. km or 4.7% of total land area (U. Kyaw Moe et al., 2002). Thailand: There are over 100 protected areas in Thailand where collecting or other forms of disturbance of any plants or animals are prohibited (van Dijk and Palasuwan, 2000). There are also various Non-Hunting areas, but there is often intensive use of selected natural resources such as plants or fish in these areas by the local population (van Dijk and Palasuwan, 2000). Vietnam: There are 11 National Parks and 91 Protected Areas designated in Vietnam which cover 13,425 km² or 4.1% of the country (MacKinnon, 1997 as cited in Hendrie, 2000; Birdlife International, 2001).

4.2.3 Management measures:

Vietnam: A Turtle Conservation and Ecology Project was established in 1998 by the Cuc Phuong National Park and the Forest Protection Department that was aimed at receiving and translocating turtles confiscated from the wildlife trade, conducting research, public education, and training of regional authorities (Hendrie, 2000).

No specific management measures for this species have been identified for the other range countries.

4.3 Control measures:

4.3.1 International trade:

Vietnam: Vietnam recently adopted CITES-implementing legislation, which should help control international trade.

4.3.2 Domestic measures:

Lao PDR: An upsurge in efforts to control wildlife trading in recent years by officials has resulted in fewer turtles being openly seen in markets, including Ban Lak in Vientiane Municipality and at Ban Lak in Bolikhamxai Province (Stuart and Timmins, 2000).

Myanmar: All wildlife is strictly protected within Wildlife Sanctuaries and National Parks in Myanmar, and any activities in Reserved Forests require special permits

under the Forest Law of Myanmar, enacted in 1992 (U Kyaw Moe et al., 2002). Thailand: Enforcement efforts to stop exploitation and trade in protected species and to prevent incursions and encroachment in protected areas are sometimes restrained by lack of manpower and identification skills and the complications from different responsibilities and authorities of various departments (van Dijk and Palasuwan, 2000). Vietnam: The National Forest Protection Department is increasing enforcement activities on the ground and investing in the training of its rangers however, the process is slow and unlikely to achieve the results that are needed to meet the threat posed by the illegal wildlife trade (Hendrie, 2000).

5. Information on Similar Species

Heosemys grandis has orange colouration on the head (*Hieremys annandalii*: yellow colouration) and has a brown radiating pattern on each yellowish ventral scute (*Hieremys annandalii*: uniform pale yellow or with irregular black blotches on yellow). *Cuora amboinensis*, which has a head pattern of yellow stripes on grey-black resembling that of juvenile *Hieremys*, always has a plastron hinge.

6. Other Comments

The species' status on the IUCN 2000 Red List is: Endangered (A1cd+2d).

All range countries were consulted by mail regarding this proposal.

The consensus recommendation from the Freshwater Turtles and Tortoises, held in Kunming, China from March 25-28, 2002, is that the Yellow-headed Temple Turtle is one of the 11 highest-priority taxa for CITES listing at COP 12. Governments of most range countries for the species were represented at the Kunming Workshop.

7. Additional Remarks

Anders G. J. Rhodin of the Chelonian Research Foundation has recommended that the species be considered for inclusion in Appendix II.

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